ABSTRACT

The present invention provides a method and product-by-method of integrating a bias resistor in circuit with a bottom electrode of a micro-electromechanical switch on a silicon substrate. The resistor and bottom electrode are formed simultaneously by first sequentially depositing a layer of a resistor material (320), a hard mask material (330) and a metal material (340) on a silicon substrate forming a stack. The bottom electrode and resistor lengths are subsequently patterned and etched (350) followed by a second etching (360) process to remove the hard mask and metal materials from the defined resistor length. Finally, in a preferred embodiment, the bottom electrode and resistor structure is encapsulated with a layer of dielectric which is patterned and etched (370) to correspond to the defined bottom electrode and resistor.